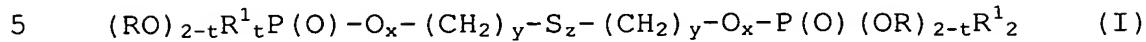


WHAT IS CLAIMED IS:

1. A compound corresponding to the formula:



in which:

- R represents a hydrogen, an alkyl, an aryl, a trialkylsilyl, a trialkylamino or an alkali metal;
- R¹ represents an alkyl or an aryl;
- x is 0 or 1;
- y is an integer from 1 to 22;
- z ≥ 3;
- t is 0 or 1.

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2. The compound as claimed in claim 1, characterized in that R is an alkyl radical having from 1 to 6 carbon atoms.

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3. The compound as claimed in claim 1, characterized in that R is trialkylsilyl group R'₃Si- in which the R' substituents represent identical or different alkyl groups having from 1 to 3 carbon atoms.

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4. The compound as claimed in claim 1, characterized in that R is a trialkylamino group R''₃N- in which the R'' substituents represent identical or different alkyl groups having from 1 to 5 carbon atoms.

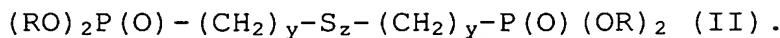
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5. The compound as claimed in claim 1, characterized in that R is an alkali metal chosen from Na and K.

6. The compound as claimed in claim 1, characterized in that x = 0.

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7. The compound as claimed in claim 6, characterized in that it corresponds to the formula



8. The compound as claimed in claim 6, characterized in that it corresponds to the formula $(RO)R^1P(O)-(CH_2)_y-S_z-(CH_2)_y-P(O)(OR)R'$ (IV).

5 9. The compound as claimed in claim 1, characterized in that $x = 1$.

10. The compound as claimed in claim 9, characterized in that it corresponds to the formula

10 $(RO)_2P(O)-O-(CH_2)_y-S_z-(CH_2)_y-O-P(O)(OR)_2$ (III).

11. The compound as claimed in claim 9, characterized in that it corresponds to the formula

$(RO)R^1P(O)-O-(CH_2)_y-S_z-(CH_2)_y-O-P(O)(OR)R^1$ (V).

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12. The compound as claimed in claim 1, characterized in that z is on average equal to 4.

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13. The compound as claimed in claim 1, characterized in that R^1 is an alkyl radical having from 1 to 18 carbon atoms or an aryl radical chosen from the phenyl, benzyl or tolyl radicals.

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14. The compound as claimed in claim 1, characterized in that y is an integer from 2 to 4.

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15. A composite material comprising an elastomeric matrix and an inorganic filler, characterized in that it comprises a compound as claimed in claim 1 as coupling agent.

16. The material as claimed in claim 15, characterized in that the inorganic filler is an oxide, a hydroxide, a carbonate or a silicoaluminate.

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17. The material as claimed in claim 15, characterized in that the inorganic filler is a metallic material chosen from steels, aluminum and copper.

18. A process for the preparation of a compound as claimed in claim 7 in which each of the R groups is an alkyl Ra and z = 4, characterized in that:

- during a first stage, the trialkoxyphosphonate $P(ORa)_3$ (VI) is reacted with the dibromoalkylene $Br-(CH_2)_y-Br$ (VII) at a temperature of the order of 140°C in order to obtain $Br-(CH_2)_y-P(O)(ORa)_2$ (VIII),
- during a second stage, the phosphonate $Br-(CH_2)_y-P(O)(ORa)_2$ (VIII) is reacted with Na_2S_4 under reflux of the methanol in order to obtain the compound $(RaO)_2P(O)-(CH_2)_y-S_4-(CH_2)_y-P(O)(ORa)_2$ (IIa).

19. A process for the preparation of a compound as claimed in claim 7 in which each of the R groups is a trialkylsilyl R'_3Si- , characterized in that it consists in reacting the compound $(RaO)_2P(O)-(CH_2)_y-S_4-(CH_2)_y-P(O)(ORa)_2$ (IIa) with a trialkylsilyl bromide R'_3SiBr in a 1/4 molar ratio in order to obtain the compound (IIb) $(R'_3SiO)_2P(O)-(CH_2)_y-S_4-(CH_2)_y-P(O)(OSiR'_3)_2$.

20 20. A process for the preparation of a compound as claimed in claim 7 in which R is H, characterized in that it consists in hydrolyzing a compound $(Ra)_2P(O)-(CH_2)_y-S_4-(CH_2)_y-P(O)(ORa)_2$ in which Ra is an alkyl or hydrolyzing or alcoholyzing a compound $(R'_3SiO)_2P(O)-(CH_2)_y-S_4-(CH_2)_y-P(O)(OSiR'_3)_2$.

30 21. A process for the preparation of a compound as claimed in claim 10 in which R represents H, characterized in that:

- during a first stage, $P(O)Cl_3$ is reacted with $HO(CH_2)_yCl$ in stoichiometric proportions in order to obtain the compound $Cl(CH_2)_yOP(O)Cl_2$;
- during a second stage, the compound $Cl(CH_2)_yOP(O)Cl_2$ is hydrolyzed in order to obtain the compound $Cl(CH_2)_yOPO_3H_2$;
- during a third stage, $Cl(CH_2)_yOPO_3H_2$ is reacted with Na_2S_4 under reflux of the methanol and then an ion exchange is carried out in order to obtain the compound

$(HO)_2P(O)-O-(CH_2)_y-S_z-(CH_2)_y-O-P(O)(OH)_2$.